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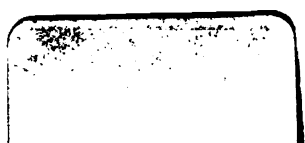
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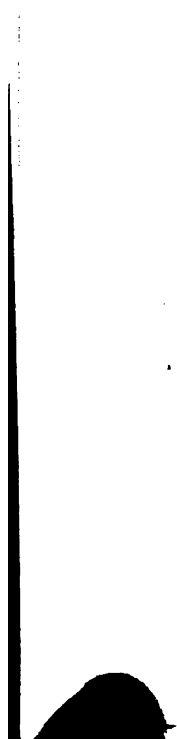








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# INDEX TO THE REPORTS OF THE TESTS OF METALS

AND

## OTHER MATERIALS

MADE WITH THE

UNITED STATES TESTING MACHINE AT  
WATERTOWN ARSENAL, MASS.

AND TO THE

REPORTS OF THE UNITED STATES BOARD  
FOR THE TESTS OF METALS

FROM 1881 TO 1912  
BOTH INCLUSIVE

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PREPARED UNDER THE DIRECTION OF THE CHIEF OF ORDNANCE, U. S. A.



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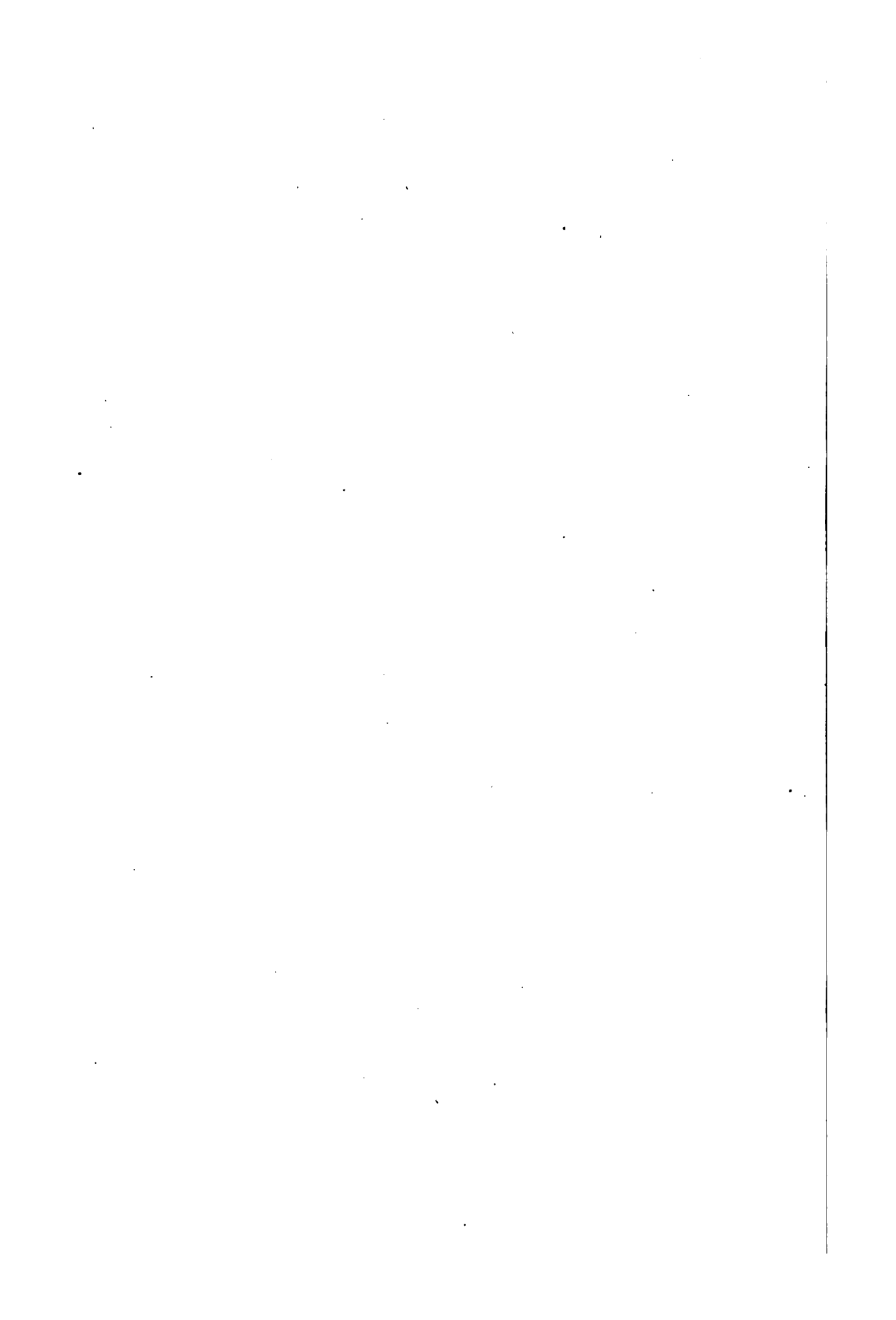
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[The Chief of Ordnance requests that he be informed of any errors or important omissions that may be found in this index.]

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Do.....	1897	565
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Do.....	1897	565
1.13 inches circumference, seizing, 12-thread.....	1891	787
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1½ inches circumference.....	1897	561, 567
Do.....	1893	436
1½ inches circumference, Russian.....	1893	436
1½ inches circumference, bolt rope, tarred.....	1896	476
1½ inches circumference, tested wet.....	1891	752
1½ inches circumference.....	1896	475
Do.....	1891	784
2 inches circumference.....	1885	1121
Do.....	1891	784
Do.....	1896	475
2 inches circumference, bolt rope.....	1897	561, 567
2 inches circumference, Russian and ordinary.....	1893	436
2 inches circumference, bolt rope, tarred.....	1896	476
2½ inches circumference.....	1891	784
2½ inches circumference.....	1885	1121
Do.....	1891	784
Do.....	1906	175
2½ inches circumference, bolt rope.....	1896	476
2½ inches circumference, Russian and ordinary.....	1893	436
2½ inches circumference.....	1896	475
2½ inches circumference.....	1891	784
Do.....	1896	475
2½ inches circumference.....	1897	561, 567
3.20 inches circumference.....	1891	753
Do.....	1891	754
3 inches circumference.....	1885	1121
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Do.....	1891	784
3½ inches circumference.....	1897	561, 567
Do.....	1884	477
3½ inches circumference.....	1891	784
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4 inches circumference.....	1891	784
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5.63 inches circumference.....	1891	784
5.88 inches circumference.....	1891	784
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Do.....	1891	785
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2½ inches circumference.....	1891	785
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Do.....	1904	291
Do.....	1905	232
Do.....	1905	233
Do.....	1907	105
Do.....	1891	785
Do.....	1893	436
Do.....	1906	175
Do.....	1904	291
3½ inches circumference.....	1884	476
Do.....	1891	785
3½ inches circumference.....	1884	476
Do.....	1905	233
Do.....	1907	105
Do.....	1891	785
Do.....	1893	436
Do.....	1906	175
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4½ inches circumference.....	1891	785
4½ inches circumference.....	1891	785
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2 inches circumference.....	1885	1115
Do.....	1885	1120
Do.....	1896	461
2½ inches circumference, tested wet.....	1897	491
2½ inches circumference.....	1885	1115
Do.....	1885	1120
2½ inches circumference.....	1897	493
2½ inches circumference, tested wet.....	1897	494
2.88 inches circumference.....	1891	762
3 inches circumference.....	1885	1115
Do.....	1885	1120
Do.....	1896	462
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Do.....	1884	482
Do.....	1884	484
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Do.....	1885	1119
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9.00 inches circumference.....	1891	783
9.45 inches circumference.....	1893	435
9.88 inches circumference.....	1891	784
10.00 inches circumference.....	1897	557, 567
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Do.....	1905	233
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4.15 inches circumference.....	1897	560, 567
4.30 inches circumference.....	1906	175
4.50 inches circumference.....	1905	232
Do.....	1905	233
Do.....	1896	475
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<b>Analysis, chemical—Continued.</b>		
10-inch steel, breech-loading—		
Breech plates, bronze .....	1897	[ 301
Jackets .....	1894	69
Do. ....	1897	582
Do. ....	1898	689
Trays, bronze .....	1895	206, 207
Do. ....	1896	237
Tubes .....	1894	53
12-inch steel, breech-loading—		
Breech plates, brass .....	1893	264
Breech plates, bronze .....	1897	301
Jackets .....	1892	113
Do. ....	1895	703
Do. ....	1897	582
Tubes .....	1892	113
Do. ....	1898	689
Trays, bronze .....	1895	206, 207
Do. ....	1897	301
16-inch breech-loading, trunnion hoops .....	1902	587
Consoles .....	1891	241
Do. ....	1894	265
Dynamite, cast iron, barrel .....	1899	899
Gatling, barrel, steel .....	1897	581
Do. ....	1898	689
Do. ....	1900	1161
Hoop .....	1903	108
Do. ....	1905	113
Hoops, streaked .....	1902	108
Do. ....	1903	88
Do. ....	1904	150,
		159, 177
Life-saving, Lyle .....	1893	532
Do. ....	1900	1163
Tube, 5 inch experimental .....	1903	108
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Brazing for, copper .....	1882	180
Tube .....	1883	193
Watertown Arsenal .....	1893	284
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Band .....	1884	265
Base rings .....	1886	482
Breech blocks .....	1886	428
Jackets .....	1884	260
Do. ....	1886	191
Obturator spindles .....	1886	507
Do. ....	1887	183
Tabulation .....	1886	518
Do. ....	1887	195
Trunnion ring .....	1884	272
Tubes .....	1886	15
5-inch steel, breech-loading—		
Base ring .....	1886	550
Breech blocks .....	1886	548
Jackets .....	1886	535

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Jackets .....	1887	198
Tabulation .....	1886	554
Tubes .....	1886	529
8-inch steel, breech-loading—		
Hoops .....	1885	366
Jackets .....	1885	{280,333,
Do .....	1887	348
Do .....	1890	270
Do .....	1891	54
Do .....	1891	84
Do .....	1892	53
Tabulation .....	1885	314, 403
Do .....	1886	598
Do .....	1887	452
Do .....	1891	116
Do .....	1892	56
Tubes .....	1885	{263,319,
Do .....	1886	339
Do .....	1890	560
Do .....	1891	53
Do .....	1891	44
Do .....	1892	47
8-inch steel, breech-loading (Yates), tube .....	1885	644
10-inch steel, breech-loading—		
Jackets .....	1886	1000
Do .....	1887	480
Do .....	1891	121
Do .....	1892	75
Tabulation .....	1886	1078
Do .....	1887	613
Do .....	1892	89
Tubes .....	1886	978
Do .....	1887	460
Do .....	1891	119
Do .....	1892	60
10-inch wire-wound, cast-iron, parts .....	1884	417
Do .....	1885	453, 460
10-inch wire-wound, steel—		
Tabulation .....	1885	452
Do .....	1890	106
Trunnion hoop .....	1885	434
Tubes .....	1885	411
Do .....	1886	1085
Do .....	1890	75
12-inch, breech-loading, cast-iron body, hooped and tubed with steel—		
Bodies .....	1885	477
Do .....	1886	1109
Hoops .....	1885	507
Tabulation .....	1885	587
Do .....	1886	1139
Tubes .....	1885	496
Do .....	1886	1130
12-inch steel, breech-loading—		
Jackets .....	1890	133
Do .....	1892	109
Tabulation .....	1890	168
Do .....	1892	113
Tubes .....	1890	115
Do .....	1892	103



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Exterior pressure and longitudinal compression combined.....	1894	305
Do.....	1897	250
Exterior pressure and longitudinal tension combined....	1894	305
Do.....	1897	255
Interior pressure alone.....	1893	190
Do.....	1897	249
Interior and exterior pressure combined.....	1894	300
Interior and exterior pressure and longitudinal compression combined.....	1894	306
Do.....	1897	249
Interior and exterior pressure and longitudinal tension combined.....	1894	303
Interior pressure and longitudinal compression combined.....	1894	304
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3.2-inch rifles.....	1887	775
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5-inch R. F. guns.....	1898	217
Do.....	1899	395, 475
Do.....	1900	893
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5-inch R. F. gun tubes, tension specimens from.....	1899	497
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Do.....	1890	735
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Do.....	1891	19
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5-inch B. L. siege.....	1891	28
Do.....	1892	44
6-inch Navy.....	1885	627
6½-inch Mann.....	1884	407
Do.....	1885	631
8-inch B. L.....	1884	377
Do.....	1885	401
Do.....	1886	598
Do.....	1887	447
		448, 451
Do.....	1890	59
Do.....	1891	114
Do.....	1892	56
8-inch breech-loading Yates.....	1885	641
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Do.....	1891	121
Do.....	1892	89
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Do.....	1892	113
Do.....	1885	602
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Do.....	1894	161
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Do.....	1889	368
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Do.....	1894	265
Do.....	1898	396
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Barrel, cast iron.....	1899	623
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		1047
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Gatling, barrel, steel.....	1897	179
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Life-saving, Lyle, bronze.....	1884	422
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75 mm. Mountain—		
Block carriers.....	1902	15
Do.....	1904	64
Bodies.....	1902	13
Do.....	1903	27
Do.....	1904	63
Breech blocks.....	1902	14
Do.....	1903	43
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Do.....	1903	43
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Jackets.....	1899	16
Tabulation.....	1899	19
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6-pounder, bronze, old.....	1884	432
12-pounder, bronze, old.....	1902	72
15-pounder, rapid fire—		
Breech blocks.....	1903	22
Do.....	1904	19
Breech bushings.....	1903	23
Do.....	1904	20
Jackets.....	1903	17
Do.....	1904	16
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Do.....	1905	29
Do.....	1906	69
Breech bushings.....	1906	74
Carrier blocks.....	1903	56
Do.....	1904	65
Clips.....	1904	65
Do.....	1905	31
Hoops.....	1899	39
Jackets.....	1899	35
Do.....	1900	17
Do.....	1903	50
Do.....	1904	25
Do.....	1905	19
Do.....	1906	48

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Guns, specimens—Continued.		
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3-inch R. F.—Continued.		
Locking ring.....	1903	55
Tabulation.....	1899	40
Do.....	1900	21
Do.....	1903	56
Do.....	1904	30
Do.....	1905	33
Do.....	1906	75
Tubes.....	1899	23
Do.....	1900	15
Do.....	1903	47
Do.....	1904	23
Do.....	1905	11
Do.....	1906	33
3-inch field gun, 1905, breech block, jacket, lock hoop and tube.	1910	12-23
3.2-inch steel breech-loading—		
Band.....	1884	263
Base keys and key rings.....	1886	481
Do.....	1887	163
Do.....	1888	210
Block carriers.....	1887	173
Breech blocks.....	1886	427
Do.....	1887	158
Do.....	1888	209
Gas checks.....	1887	177
Do.....	1888	211
Do.....	1890	42
Jackets.....	1884	257
Do.....	1886	189
Do.....	1887	57
Do.....	1888	115
Do.....	1889	23
Do.....	1891	15
Do.....	1892	18
Do.....	1893	20
Do.....	1897	21
Do.....	1898	29
Do.....	1899	46
Sleeves.....	1886	495
Do.....	1887	132
Do.....	1888	207
Tabulation.....	1886	513
Do.....	1887	190
Do.....	1888	214
Do.....	1889	34
Do.....	1890	49
Do.....	1891	19
Do.....	1892	22
Do.....	1893	26
Do.....	1897	26
Do.....	1898	45
Do.....	1899	49
Trunnion hoops.....	1884	269
Do.....	1886	317
Do.....	1887	109
Do.....	1888	145
Tubes.....	1886	13
Do.....	1887	13
Do.....	1888	7
Do.....	1889	11
Do.....	1890	15

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Guns, specimens—Continued.		
Tensile tests—Continued.		
3.2-inch steel breech-loading—Continued.		
Tubes.....	1891	9
Do.....	1892	13
Do.....	1893	15
Do.....	1897	15
Do.....	1898	13
Do.....	1899	43
3.2-inch B. I. (Driggs-Schroeder), steel tube.....	1891	20
3.6-inch steel breech loading—		
Jackets.....	1889	41
Do.....	1892	30
Key ring.....	1890	50
Sleeves.....	1889	45
Tabulation.....	1889	47
Do.....	1892	34
Tubes.....	1889	37
Do.....	1892	25
4.7-inch rapid-fire Hotchkiss, specimens from exploded breech.....	1895	313
4.7-inch siege, model of 1906, tube, jacket and gun body....	1910	25-28
5-inch Mann, tube.....	1884	407
5-inch rapid-fire.....	1905	74
Breech blocks.....	1903	65
Gas checks.....	1903	67
Hoops.....	1903	63
Jackets.....	1898	192
Do.....	1899	73
Do.....	1903	61
Do.....	1904	34
Recoil bands.....	1904	65
Spindles.....	1903	66
Tabulation.....	1899	77
Do.....	1903	67
Tubes.....	1898	189
Do.....	1899	497
Do.....	1903	59
Do.....	1904	33
5-inch steel breech-loading—		
Base ring.....	1886	549
Breech blocks.....	1886	547
Gas-check cups.....	1888	219
Jackets.....	1886	533
Do.....	1887	196
Do.....	1891	26
Do.....	1892	44
Do.....	1893	33
Do.....	1897	30
Do.....	1898	56
Do.....	1899	63
Do.....	1900	31
Do.....	1901	19
Obturator stems.....	1886	553
Sleeves.....	1886	551
Tabulation.....	1886	554
Do.....	1891	28
Do.....	1892	44
Do.....	1893	36
Do.....	1899	70
Do.....	1900	33
Do.....	1901	19
Tubes.....	1886	527

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Guns, specimens—Continued.		
Tensile tests—Continued.		
5-inch steel breech-loading—Continued.		
Tubes.....	1891	23
Do.....	1892	43
Do.....	1893	29
Do.....	1897	29
Do.....	1898	55
Do.....	1899	57
Do.....	1900	29
Do.....	1901	17
6-inch rapid-fire.....	1905	74
Breech blocks.....	1902	25
Do.....	1904	52
Do.....	1905	46
Breech bushing.....	1906	85
Hoops.....	1902	24
Do.....	1905	40
Do.....	1906	84
Jackets.....	1899	87
Do.....	1900	38
Do.....	1901	27
Do.....	1902	21
Do.....	1904	44
Do.....	1905	38
Do.....	1906	80
Spindles.....	1905	50
Do.....	1906	86
Tabulation.....	1899	92
Do.....	1901	30
Do.....	1902	25
Do.....	1904	54
Do.....	1905	50, 59
Do.....	1906	87
Tubes.....	1899	81
Do.....	1900	37
Do.....	1901	23
Do.....	1902	19
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Do.....	1905	37, 51
Do.....	1906	79
Model of 1908, parts.....	1910	29-33
6-inch siege howitzer, 1908.....	1910	36
6-inch, steel, Navy, jacket.....	1885	625
6-inch, wire-wound, Crozier, experimental.....	1907	44, 46
Do.....	1908	44
6½-inch, Mann—		
Breech hoop.....	1885	631
Retaining ring.....	1885	634
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7-inch, No. 97, "A" hoop.....	1910	55-56
8-inch steel breech-loading—		
Block carrier.....	1887	438
Breech blocks and bushing rings.....	1885	395
Do.....	1887	422
Breech plates.....	1893	264
Do.....	1896	237
Do.....	1897	301
Console, bronze.....	1885	399
Gas-check cups and ring.....	1887	431
Hoops.....	1884	389
Do.....	1885	291, 353

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Guns, specimens—Continued.		
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8-inch steel breech-loading—Continued.		
Hoops.....	1886	943
Do.....	1887	299
Do.....	1888	227
Jackets.....	1885	273, 327,
		343
Do.....	1887	267
Do.....	1890	57
Do.....	1891	83
Do.....	1892	51
Do.....	1893	63
Do.....	1894	27
Do.....	1895	25
Coupling pin.....	1886	597
Spindle.....	1887	440
Hinge pin.....	1887	446
Tabulation.....	1885	313, 401
Do.....	1886	598
Do.....	1887	447
Do.....	1891	115
Do.....	1892	56
Do.....	1893	79
Do.....	1894	37
Do.....	1895	35
Trays.....	1895	197, 206
	1896	237
Trunnion hoops.....	1885	392
Do.....	1886	589, 953
Tubes.....	1884	377
Do.....	1885	259, 317,
		337
Do.....	1886	557
Do.....	1887	261
Do.....	1888	221
Do.....	1891	43
Do.....	1893	49
Do.....	1894	17
Do.....	1895	15
Do.....	1906	94
8-inch steel breech-loading (Yates), tube.....	1885	640
8-inch converted—		
Tubes.....	1885	9
Do.....	1886	603
Do.....	1887	207
Tabulation.....	1886	929
Do.....	1887	256
10-inch steel breech-loading—		
Bail.....	1892	344
Breechblocks and bushing ring.....	1887	586
Do.....	1902	33
Do.....	1904	66
Breech plates.....	1893	264
Do.....	1896	237
Do.....	1897	301
Bushing rings and tray casting.....	1889	372
Gas checks and gas-check ring.....	1887	593
Do.....	1903	74
Hinge lug plates.....	1899	695-698
Hinge pin.....	1887	608
Hoops.....	1886	1023
Do.....	1887	495

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Tensile tests—Continued.		
10-inch steel breech-loading—Continued.		
Hoops.....	1888	233
Do.....	1889	55
Do.....	1902	32
Do.....	1903	73
Jackets.....	1886	993
Do.....	1887	475
Do.....	1892	74
Do.....	1893	87
Do.....	1894	65
Do.....	1895	45
Do.....	1896	28
Do.....	1897	55
Do.....	1898	65
Do.....	1899	103
Do.....	1900	61
Do.....	1901	40
Do.....	1902	30
Do.....	1903	72
Securing pin.....	1887	606
Spindles and faceplate.....	1887	598, 600
Do.....	1903	74
Trays.....	1895	197, 206
Do.....	1896	237
Trunnion hoops.....	1886	1017
Tubes.....	1886	973
Do.....	1887	455
Do.....	1892	59
Do.....	1893	83
Do.....	1894	41
Do.....	1895	39
Do.....	1896	13
Do.....	1897	45
Do.....	1898	63
Do.....	1900	59
Do.....	1901	39
Do.....	1902	29
Do.....	1903	71
Tabulation.....	1886	1078
Do.....	1887	609
Do.....	1889	377
Do.....	1892	89
Do.....	1893	94
Do.....	1894	87
Do.....	1895	57
Do.....	1896	38
Do.....	1897	64
Do.....	1898	67
Do.....	1900	62
Do.....	1901	41
Do.....	1902	33
Do.....	1903	74
10-inch wire-wound, cast-iron—		
Bodies.....	1884	415
Do.....	1885	454
Hoop, steel.....	1886	1093
Sleeve, steel.....	1885	461
10-inch wire-wound, steel—		
Jackets.....	1890	82
Hoops.....	1891	125
Do.....	1885	435



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Guns, specimens—Continued.		
Tensile tests—Continued.		
10-inch wire-wound, steel—Continued.		
Hoops .....	1890	91
Do. ....	1891	137
Sleeve .....	1885	427
Do. ....	1886	1089
Staves, straining test .....	1890	858
Tabulation .....	1885	451
Do. ....	1890	105
Do. ....	1891	168
Trunnion hoops .....	1885	431
Do. ....	1891	134
Tubes .....	1885	404
Do. ....	1886	1083
Do. ....	1890	63
10-inch wire-wrapped B. L. (Crozier)—		
Jacket .....	1892	93
Tabulation .....	1892	100
12-inch steel B. L.—		
Breechblocks and bushing .....	1890	166
Do. ....	1902	43
Breech plate .....	1893	264
Do. ....	1896	237
Do. ....	1897	301
Gas checks .....	1890	164
Do. ....	1901	65
Hoops .....	1889	61
Do. ....	1890	147
Do. ....	1902	42
Jackets .....	1890	130
Do. ....	1892	110
Do. ....	1893	101
Do. ....	1894	101
Do. ....	1895	73
Do. ....	1896	45
Do. ....	1897	72
Do. ....	1898	75
Do. ....	1899	112
Do. ....	1900	66
Do. ....	1901	48
Do. ....	1902	39
Hinge-lug plates .....	1899	695-698
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Do. ....	1892	113
Do. ....	1893	106
Do. ....	1894	104
Do. ....	1895	85
Do. ....	1896	49
Do. ....	1897	75
Do. ....	1898	77
Do. ....	1899	114
Do. ....	1901	50
Do. ....	1902	43
Spindle .....	1885	601
Tray .....	1895	204, 206
	1896	238
12-inch B. L., cast-iron body, hooped and tubed with steel—		
Bodies .....	1885	475
Do. ....	1886	1105
Breech bushing .....	1885	581
Hoops .....	1885	501
Do. ....	1886	1099, 1119

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Tubes.....	1885	491
Do.....	1886	1127
Tabulation.....	1885	583
Do.....	1886	1138
12-inch cast iron, B. L., breech and muzzle rings.....	1885	464
Tray hinge.....	1890	679
12-inch cast iron, B. L., lined with wire-wrapped tube—		
Body.....	1886	1143
Tube.....	1885	589
12-inch nickel steel tube.....	1904	73
12-inch rifle, No. 41, section of tube including rupture—		
Hydrostatic tests.....	1908	12
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12-inch gun, No. 14.....	1910	60
12-inch naval, No. 36, specimens from fractured portion....	1907	107
12-inch wire-wound mortar, 1908.....	1910	62-67
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16-inch B. L.—		
Forging.....	1902	47
Tube.....	1899	161
	1903	83
Hoops, metal from.....	1904	143, 145
	1905	148, 150
		158, 181
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33,000-35,000 pounds.....	1888	834
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45,000 pounds, bar 6 (heated, 344° F.) .....	1890	949
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<i>Pinus Torreyana</i> .....	<i>Pinus Torreyana</i> .....	1883	663
<i>Pinus tuberculata</i> .....	<i>Pinus tuberculata</i> .....	1883	664
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